Software and libraries
for HVAC/R applications

CAREL

the essence of *25 years* of experience in programming tools

Software
programming tool
for pCO sistema

CAREL

1tool
Software suite for HVAC/R applications

1tool Software programming tool for pCO sistema CAREL

Development, Simulation, Commissioning:

3 needs 1tool

1tool is the new development tool for the CAREL programmable controller platform.

It features five different environments available to the developer for managing all phases of the application program: from design to testing and debugging and right up to commissioning in the field.
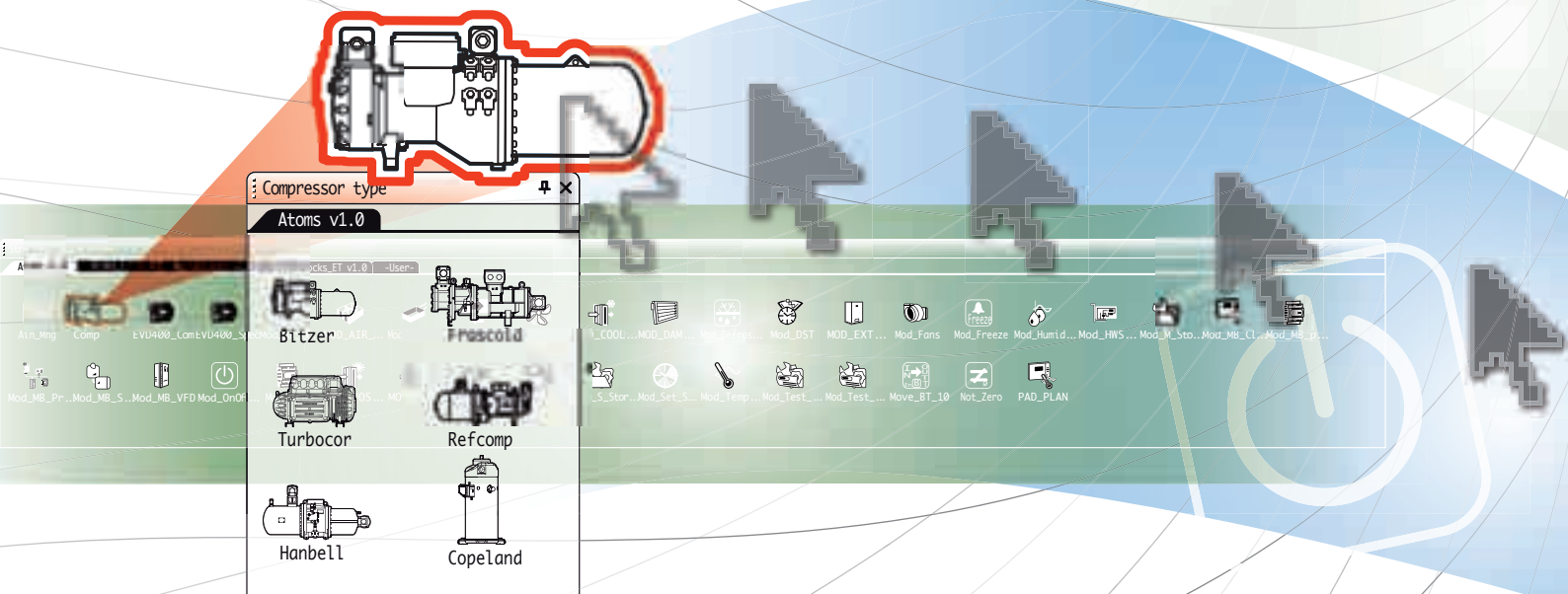
The fundamental aspect of this tool is integration. All the environments are linked together to best support development of the application program. Each environment is dedicated to the development of a specific function and interacts with the other environments so as to ensure the developer:

- greater reliability, thanks to the real time error notification in the design phase;
- a reduction in development times using the new functions available, above all the new libraries of functional modules;
- flexibility in terms of software customisation.

All these features, new graphics and user-friendliness make 1tool an excellent product that responds to a variety of needs for HVAC/R applications.

Based on its expertise acquired in the market, CAREL can offer a vast library for HVAC/R applications.

Indeed, the libraries of atoms, macroblocks and modules are the added value of 1tool. A system of functions that can precisely respond to the different design needs.

The CAREL library of functional blocks includes:

• 80 atoms, the basic elements of 1tool;

• 121 macroblocks, complex algorithms based on consolidated and secure logic;

• 45 modules, functional blocks made up of control algorithms and corresponding user interfaces.

During development, the different elements that make up the library can be used at the same time. This allows the developer, depending on the level of complexity required by the application, to use the right combination of functional blocks for the construction of the application, from simple modifications to the development of highly complex algorithms.

CAREL can also supply a vast range of standard applications for its family of programmable controllers, 12 different standard solutions for the HVAC/R market designed for developers who need a solid starting point to create custom solutions.

experience

Modules
multiple programming levels and integrated user interface management

1tool offers different levels of programming. As well as the consolidated libraries of atoms and macroblocks, new libraries of functional modules are now also available. Modules are functional blocks made up of control algorithms and corresponding user interfaces. The developer can thus, with a simple "click", import the desired algorithm and all the corresponding user interfaces into the application, saving a significant amount of development time.

To best support its customers, CAREL provides libraries of functional modules designed for the various different HVAC/R applications.

Users can also convert their own specific algorithms into reusable modules, making the development of subsequent projects faster and more secure, being based on consolidated logic.

Chiller Core
made to be customised

Chiller Core is the exclusive new application that includes all the essential functions for managing the operation of chillers. It is a tool designed for 1tool developers who need a solid base to start creating custom applications.

Chiller Core is arranged into modules, meaning the code is easy to follow and edit.

Each function of the "core" has been simplified for the purpose of making it readily customisable.

Thanks to this extreme flexibility, Chiller Core is the ideal tool for checking the operation of chillers during testing and service.

The solution for managing all the steps in th

Development

multiple programming levels and integrated user interface management

The integration of ST (Structured text) and Ladder Logic allow 1tool to support two standard IEC 61131-3 languages.
The two new languages and CAREL libraries of functional blocks (atoms, macroblocks and modules) can be used at the same time in the same application program, allowing the developer to create control algorithms in the simplest possible way. This system offers the following advantages:
• increased visibility of the code;
• greater reusability of the code;
• subdivision of the application into modules that can be developed in parallel by different programmers.

Simulation

integrated application for debugging the algorithms, user interface and network

Using the Simulation Editor, the applications developed can be tested quickly and reliably, simulating the control algorithm and the corresponding user interface in detail.
Firstly, the developer can apply different types of simulation, from continuous execution of the application to step-by-step execution of the various functional blocks making up the algorithm.
During simulation the input and output values of the various functional blocks can be displayed in real time.
The use of break-points allows faster debugging of the application being developed.

Commissioning

simplified field setup, diagnostics and local and remote maintenance

pCO Manager is the new 1tool environment that assists the user in the configuration and setup of the HVAC/R unit. Available in two versions (integrated into 1tool and stand-alone), it allows the user to configure the unit parameters quickly and safely, and then test the actual application (using the serial connection between the controller on the unit and the PC).
Security in controlling the parameters is ensured by different access profiles, each with different resrictions based on the type of user.
Remote monitoring is guaranteed by the connection via modem (PSTN or GSM).

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